

Listing of Claims

1.(original) A method for mounting a screen assembly to a screen mounting structure of a vibratory separator to facilitate sealing of an interface between the the screen assembly and the screen mounting structure, the screen mounting structure including a plurality of support members extending from a first separator side of the vibratory separator to a second separator side thereof with material flowable between said sides in a first direction that is a direction generally parallel to said sides, the screen assembly having a support and screening material on the support for treating material introduced to the vibratory separator, the support including four interconnected sides including two pairs of sides, a first pair with a first side and a second side and a second pair with a third side and a fourth side, the first side spaced-apart from the second side by spaced-apart third and fourth sides, the first side and the second side generally parallel to the first separator side and the second separator side upon installation of the screen assembly in the vibratory separator, the support having generally screening material thereon, the support having a plurality of spaced-apart crossmembers extending between and connected to only one of the pairs of sides, each crossmember not in contact with and independent of all other crossmembers, the screen mounting structure including crowning apparatus for forcible abutment against the third side and the fourth side of the support to effect bending of the first side and the second side of the support and thereby effect crowning of the screen assembly within the vibratory separator, the method comprising

locating the screen assembly on the screen mounting structure,

positioning the screen assembly with respect to the screen mounting structure so that the crossmembers are all either generally transverse to or all generally parallel to the first direction, and

forcing the first and second sides of the support down with the crowning apparatus to effect crowning of the screen assembly, the support rigid yet sufficiently flexible so that with the screen assembly in a crowned configuration the third side and the fourth side each along substantially all of the length thereof sealingly contact a surface of the screen mounting structure.

1 **2.(original)** The method of claim 1 wherein the plurality of spaced-apart
2 crossmembers is two crossmembers generally parallel to the third side and the fourth
3 side.

1 **3.(original)** The method of claim 1 wherein the plurality of spaced-apart
2 crossmembers is five crossmembers generally parallel to the first direction.

1 **4.(original)** The method of claim 1 wherein the first side and the second side
2 are each made of material less rigid than material of the third side and the fourth side.

1 **5.(original)** The method of claim 1 wherein the first side has at least a portion
2 thereof made of material less rigid than material of the third side and the fourth side.

1 **6.(original)** The method of claim 1 further comprising
2 connecting a seal member at a first location of an exterior of at
3 least one of the first side or the second side to remedy ineffective sealing at
4 said first location.

1 **7.(original)** The method of claim 6 wherein the seal member has at least a
2 portion thereof within a recess at the first location.

1 **8.(original)** The method of claim 1 wherein the screen mounting structure has
2 a body with at least one upwardly projecting member projecting upwardly from the
3 body member, said at least one upwardly projecting member sized and configured so
4 it is receivable in a corresponding hole in the support, the method further comprising
5 positioning the screen assembly on the screen mounting structure
6 so that the at least one upwardly projecting member is received in the
7 corresponding hole of the support.

1 **9.(original)** The method of claim 8 wherein the at least one upwardly
2 projecting member is a plurality of spaced-apart upwardly projecting members and
3 wherein the at least one hole in the support is a plurality of spaced-apart holes, each
4 for receiving a corresponding upwardly projecting member.

1 **10.(original)** The method of claim 8 wherein the corresponding hole in the
2 support is in a crossmember of the support.

1 **11.(original)** The method of claim 1 wherein the vibratory separator is a shale
2 shaker for separating components of drilling material introduced thereto, the drilling
3 material including drilling fluid and drilled cuttings, the shale shaker having a basket,
4 the screen mounting structure on the basket, the support having a plurality of spaced
5 apart support holes therethrough, each hole of the plurality of spaced apart support
6 holes for receiving part of a fastener used for releasably connecting the screen
7 assembly to the screen mounting structure, the screen mounting structure having a
8 plurality of spaced-apart deck holes corresponding to the plurality of spaced-apart
9 support holes through the support, and fasteners connecting the screen assembly to
10 the screen mounting structure, each fastener passing through the screening material,
11 through a support hole, and into a deck hole, the method further comprising
12 connecting the support to the screen mounting structure with the
13 fasteners.

1 **12.(original)** The method of claim 11 wherein the fasteners are from the group
2 consisting of threaded fasteners, screens, bolts, locking fasteners, finger expansion
3 fasteners, air injection fasteners, and friction-fit fasteners.

1 **13.(original)** The method of claim 11 wherein the fasteners are adhesively
2 secured in place.

1 **14.(original)** The method of claim 11 wherein the screening material comprises
2 a plurality of layers of screen mesh.

1 **15.(original) The method of claim 11 wherein the screen assembly has on the**
2 **support a perforated plate.**

1 **16.(original) The method of claim 11 wherein the sides of the support comprise**
2 **hollow tubular members.**

1 **17.(original) The method of claim 1 wherein all of the crossmembers are**
2 **generally transverse to the first direction, the material introduced to the vibratory**
3 **separator containing solids not passable through the screening material, the solids**
4 **movable on a top of the screening assembly by the vibratory separator, the method**
5 **further comprising**
6 **moving the solids uniformly on the top of the screening**
7 **assembly.**

1 **18.(original) The method of claim 17 wherein the material is drilling material and**
2 **the solids include drilled solids.**

1 **19.(original) The method of claim 17 wherein the solids are moved on the top**
2 **of the screen assembly without the formation of significant dead zones on the top of**
3 **the screen assembly.**

1 **20. (cancelled).**

1 **21. (new) A screen assembly for releasable mounting to a mounting structure**
2 **of a shale shaker, the mounting structure comprising a body over which a screen**
3 **assembly is positionable, part of fluid to be treated by the shale shaker flowable**
4 **through the body, at least one upwardly projecting member projecting upwardly from**
5 **the body, said at least one upwardly projecting member sized and configured so it is**
6 **receivable in a corresponding hole in the screen assembly, said at least one projecting**
7 **member having a projecting member cross-sectional area, the screen assembly**
8 **comprising**

9 a support,

10 screening material on the support,

11 the support comprising a frame with two spaced-apart ends, the
12 two spaced-apart ends spaced-apart by two spaced-apart sides, each of the
13 two spaced-apart sides connected to each of the two spaced-apart ends, the
14 frame having a plurality of spaced-apart crossmembers extending between the
15 two spaced-apart sides from one side to the other side, at least part of the
16 frame comprising a tubular member with a top and a bottom, a portion of the
17 screening material on top of the tubular member,

18 at least one hole in the bottom of the tubular member, said at least
19 one hole sized, configured, and located for receiving said at least one upwardly
20 projecting member of the body of the mounting structure, said at least one hole
21 having a hole cross-sectional area greater than said projecting member cross-
22 sectional area.

1 22. (new) A shale shaker system for separating components of drilling fluid
2 with solids entrained therein, the shale shaker system comprising

3 a base,

4 a screen mounting basket on the base,

5 vibrating apparatus connected to the screen mounting basket for
6 vibrating the screen mounting basket,

7 the screen mounting basket comprising mounting structure for at
8 least one screen assembly mounted on the mounting structure, the mounting
9 structure comprising a body over which the at least one screen assembly is
10 positionable, part of the drilling fluid to be treated by the shale shaker flowable
11 through the at least one screen assembly and through the body,

12 at least one screen assembly mounted on the mounting structure,

13 the at least one screen assembly comprising a screen assembly
14 for releasable mounting to the mounting structure of a shale shaker,

15 the mounting structure having at least one upwardly projecting
16 member projecting upwardly from the body, said at least one upwardly
17 projecting member sized and configured so it is receivable in a corresponding

18 hole in the screen assembly, said at least one projecting member having a
19 projecting member cross-sectional area,

20 the at least one screen assembly including

21 a support,

22 screening material on the support,

23 the support comprising a frame with two spaced-apart ends,
24 the two spaced-apart ends spaced-apart by two spaced-apart sides, each
25 of the two spaced-apart sides connected to each of the two spaced-apart
26 ends, the frame having a plurality of spaced-apart crossmembers
27 extending between the two spaced-apart sides from one side to the other
28 side, at least part of the frame comprising a tubular member with a top
29 and a bottom, a portion of the screening material on top of the tubular
30 member, and

31 at least one hole in the bottom of the tubular member, said
32 at least one hole sized, configured, and located for receiving said at least
33 one upwardly projecting member of the body of the mounting structure,
34 said at least one hole having a hole cross-sectional area greater than said
35 projecting member cross-sectional area.

1 23. (new) A screen assembly for releasable mounting to a mounting structure
2 of a shale shaker, the mounting structure comprising a body over which a screen
3 assembly is positionable, part of fluid to be treated by the shale shaker flowable
4 through the body, at least one upwardly projecting member projecting upwardly from
5 the body, said at least one upwardly projecting member sized and configured so it is
6 receivable in a corresponding hole in the screen assembly, said at least one projecting
7 member having a projecting member cross-sectional area, the screen assembly
8 comprising

9 a support,

10 screening material on the support,

11 the support comprising a frame with two spaced-apart ends, the
12 two spaced-apart ends spaced-apart by two spaced-apart sides, each of the

13 two spaced-apart sides connected to each of the two spaced-apart ends, the
14 frame having a plurality of spaced-apart crossmembers extending between the
15 two spaced-apart sides from one side to the other side, at least part of the
16 frame comprising a tubular member with a top and a bottom, a portion of the
17 screening material on top of the tubular member,

18 at least one hole in the tubular member, said at least one hole
19 sized, configured, and located for receiving said at least one upwardly
20 projecting member of the body of the mounting structure, said at least one hole
21 having a hole cross-sectional area greater than said projecting member cross-
22 sectional area.

1 24. (new) A shale shaker system for separating components of drilling fluid
2 with solids entrained therein, the shale shaker system comprising

3 a base,

4 a screen mounting basket on the base,

5 vibrating apparatus connected to the screen mounting basket for
6 vibrating the screen mounting basket,

7 the screen mounting basket comprising mounting structure for at
8 least one screen assembly mounted on the mounting structure, the mounting
9 structure comprising a body over which the at least one screen assembly is
10 positionable, part of the drilling fluid to be treated by the shale shaker flowable
11 through the at least one screen assembly and through the body,

12 at least one screen assembly mounted on the mounting structure,
13 the at least one screen assembly comprising a screen assembly
14 for releasable mounting to the mounting structure of a shale shaker,

15 the mounting structure having at least one upwardly projecting
16 member projecting upwardly from the body, said at least one upwardly
17 projecting member sized and configured so it is receivable in a corresponding
18 hole in the screen assembly, said at least one projecting member having a
19 projecting member cross-sectional area,

20 the at least one screen assembly including

21 a support,

22 screening material on the support,
23 the support comprising a frame with two spaced-apart ends,
24 the two spaced-apart ends spaced-apart by two spaced-apart sides, each
25 of the two spaced-apart sides connected to each of the two spaced-apart
26 ends, the frame having a plurality of spaced-apart crossmembers
27 extending between the two spaced-apart sides from one side to the other
28 side, at least part of the frame comprising a tubular member with a top
29 and a bottom, a portion of the screening material on top of the tubular
30 member, and
31 at least one hole in the tubular member, said at least one
32 hole sized, configured, and located for receiving said at least one
33 upwardly projecting member of the body of the mounting structure, said
34 at least one hole having a hole cross-sectional area greater than said
35 projecting member cross-sectional area.

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